



VIDEO & SOUND PROFESSIONAL BROADCAST

TVL 2101/6
0450-6

- Cables Audio & Vídeo • Conexiones • Conectores
- Accesorios • Soporte Técnico
- Equipos Comunicaciones por Fibra Óptica • Calidad Broadcast

DIGITAL COAXIAL VIDEO MULTICORE TVL CABLE

Descripción/ Description



Cable a la carta. Cables especiales compuestos de video (Analógico/ Digital), Audio (Twister/ Quad), potencia, UTP, etc.

The customer ask for a composition, and with an initial minimum order we can prepare it. Special cables composed of video (Analog/ Digital), Audio (Twister/ Quad), Power, STP, etc.

Construcción / Construction

- COMPOSICION/COMPOSITION:**
- 2 digital video coaxial cable VK 6/0.8
 - 1 audio cable AK 14015 AL NPI.
 - 1 data cable UTP cat. 5e Solid Wire .

1. 2 digital video coaxial cable VK 6/0.8:

1. Conductor

Cu Ø 0,8mm (AWG 20)
UNE 21-011

2. Aislante / Insulation

Foam High Density FHDPE (GAS INJECTED)
Ø 3,7 mm
IEC 708

3. Pantallas / Shields (3 pantallas/ 3shields):

3.1 Primera Pantalla /First Shield

100 % Al/ PET/Al PE H199

3.2 Segunda Pantalla /Second Shield

95 % CuSn UNE 21-064

4. Cubierta externa / General Jacket

Ø 6,00
FRLS (NPI) IEC 60332-3-25 EN 50266-2-5 CEI 20-22/3-5 (test for vertical flame spread)

Conectores recomendados / Suggested connectors:

SDI : 5031-V

HDTV (HD-SDI) : 5031-HDTV



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2. 1 audio cable AK 14015 AL NPI:

1. Cada cuadro/ Each quad (1 quad^(*)/1 quad^(*)):

1.1 Cada conductor/Each conductor:

1.1.1 Cada conductor

Cu O.F.C.
25X 0,10 mm Ø (AWG 24)
DIN 1787

1.1.2 Aislante / Insulation

PEX IEC 708
Ø 1,2 mm

1.2 Pantalla del Quad /Quad Shield:

Drain wire 7x 0,20mm CuSn short step (17) +Aluminium Foil/Gr Tape (Al/Gr) 100%
PE H199

2. Cubierta del Quad / Quad Jacket:

Ø 4,30 mm
FRLS (NPI) IEC 60332-3-25 EN 50266-2-5 CEI 20-22/3-5 (test for vertical flame spread)

3. 1 data cable UTP cat. 5e Solid Wire:

1. Conductor

Cu
0,51 mm Ø (AWG 24)
UNE 21-011

2. Aislante / Insulation

Ø 0,90 mm
PE PE H 299

Cubierta Externa / General Jacket

5,6 mm Ø
PTC UNE 21-031

4. Cubierta General/General Jacket:

Ø 16,00 mm
PTC UNE 21-031

- Colors: Black
 Peso/Weight (Kg / Km) : 215

REVISION DATE: 09-12-2009



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[Datos Técnicos / Data Sheet](#)

Propiedades Eléctricas / Electrical Properties

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DIGITAL VIDEO COAXIAL CABLE VK 6/0.8 DATA:

| | | | | | | |
|---|------------------|-----------|--------|---------|---------|---------|
| Velocidad de Propagación/Velocity of propagation | % | 81,9 | | | | |
| Retraso Nominal/Nominal Delay | ns/m | 4,05 | | | | |
| Impedancia Nominal / Nominal Impedance | W | 75 ± 1 W | | | | |
| Capacidad Nominal / Nominal Capacitance | PF/m | 54,043 | | | | |
| Máxima tensión de trabajo/Max. Operation Voltage | V | 300 | | | | |
| Inductancia Nominal/Nominal inductance | µH/m | 0,305 | | | | |
| Resistencia núcleo en DC/ Conductor DC resistance | W/Km | 33,81 | | | | |
| Resistencia malla en DC/Shield DC resistance | W/Km | 13,71 | | | | |
| ATENUACION/ATTENUATION: | Freq (Mhz) | dB/100m | | | | |
| | 1,003 | - 0,931 | | | | |
| | 5,430 | - 2,023 | | | | |
| | 24,886 | - 4,351 | | | | |
| | 81,242 | - 7,210 | | | | |
| | 120,288 | - 8,559 | | | | |
| | 163,896 | - 9,861 | | | | |
| | 211,261 | - 11,172 | | | | |
| | 270,032 | - 12,673 | | | | |
| | 540,028 | - 18,309 | | | | |
| | 720,50 | - 21,428 | | | | |
| | 1000 | - 25,483 | | | | |
| | 2000 | - 36,584 | | | | |
| | 3000 | - 41,344 | | | | |
| Minimum STRUCTURAL RETURN LOSS (SRL) | Sweep | dB | | | | |
| | 5Mhz – 300Mhz | -24,63 | | | | |
| | 300 Mhz- 650 Mhz | -20,52 | | | | |
| | 650Mhz – 1100Mhz | -15,11 | | | | |
| SMITH CHART (300Khz-270Mhz) | | | | | | |
| Frequency (Mhz) | 4,117 | 51,614 | 101,09 | 159,167 | 215,204 | 263,084 |
| Ohms (O) | 75,43 | 74,74 | 74,19 | 75,33 | 74,62 | 74,17 |

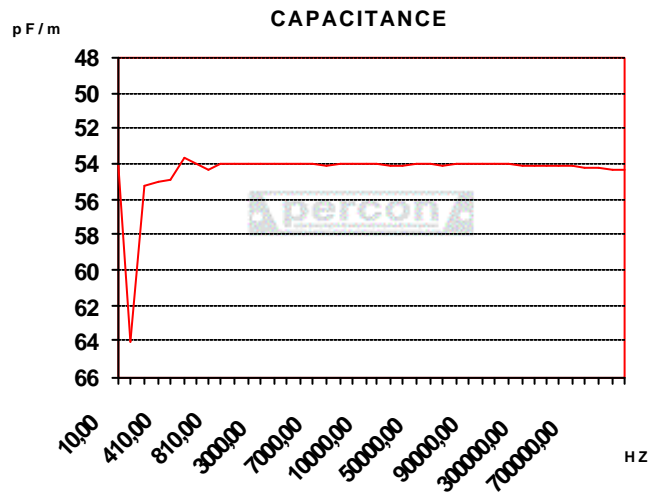
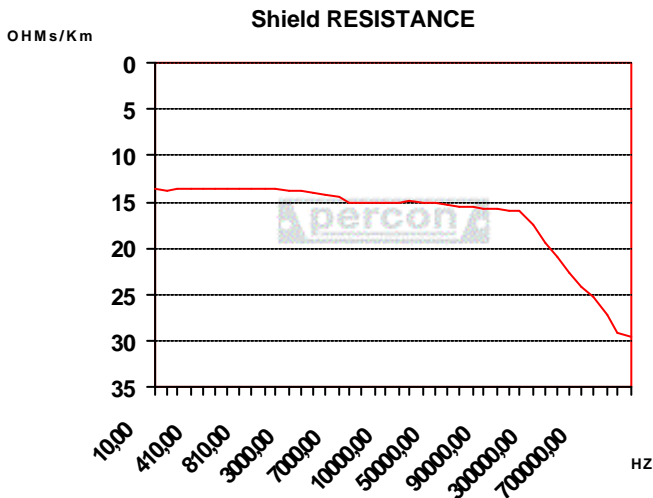
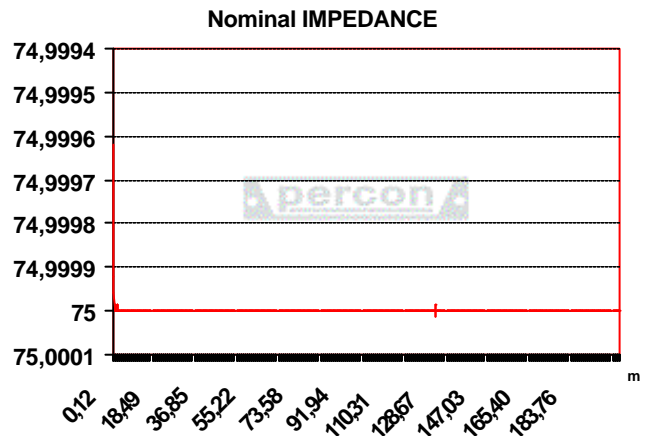
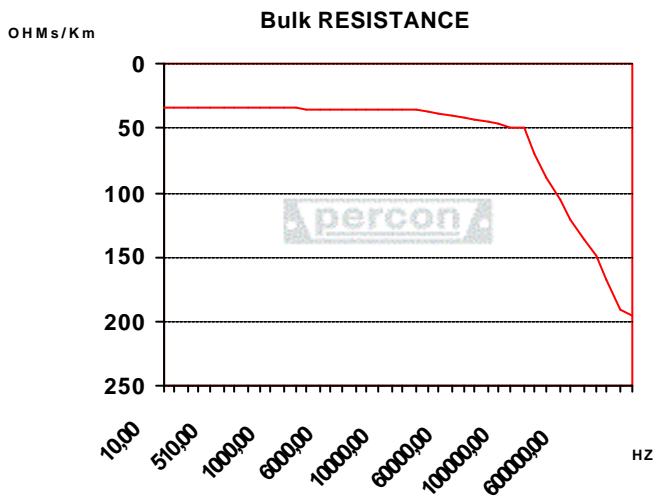
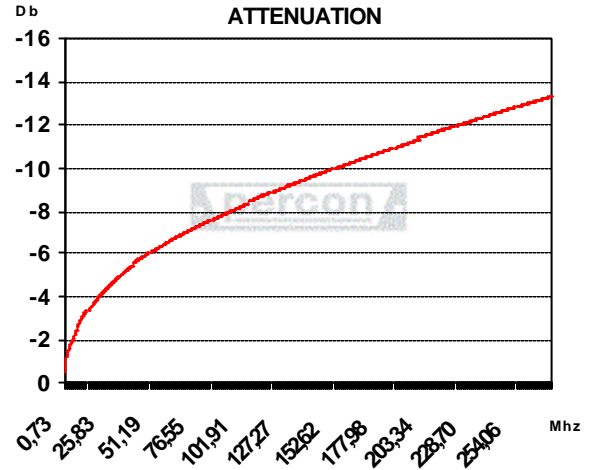
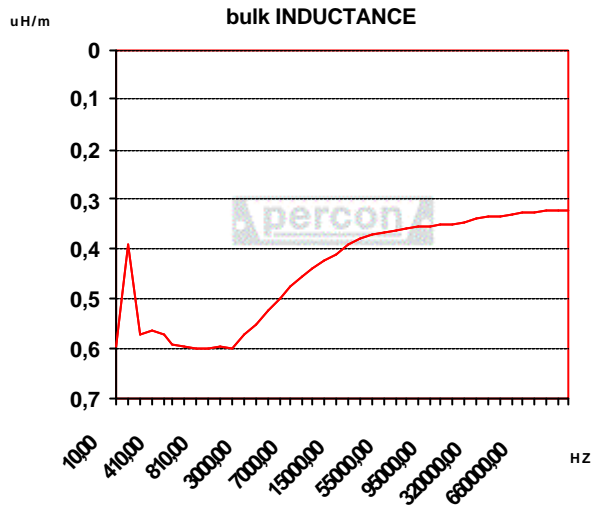


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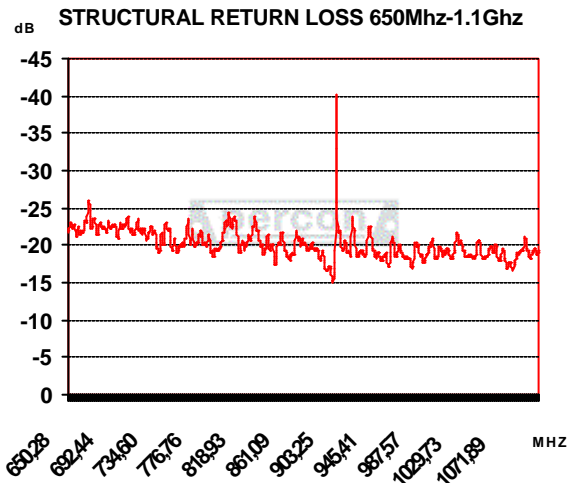
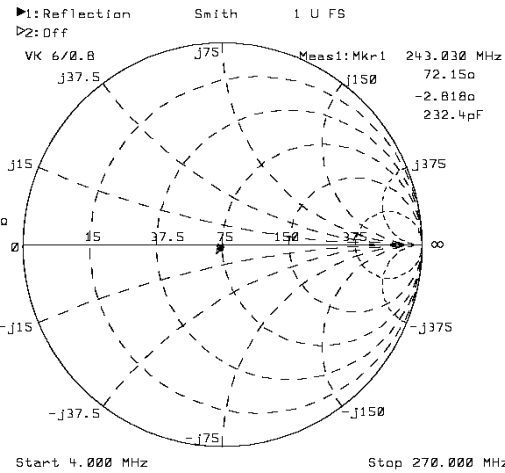
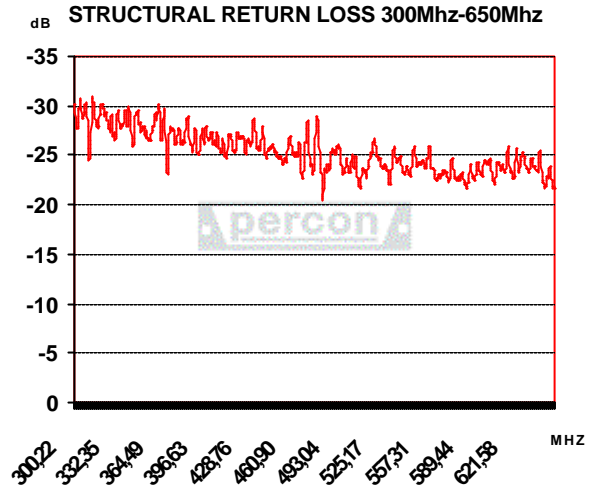
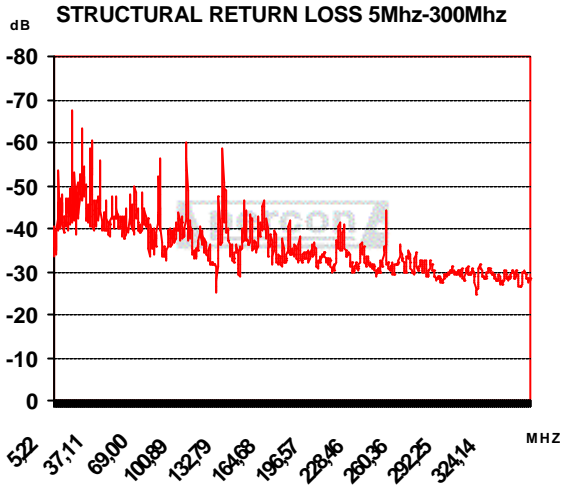


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Datos de aplicación / Application Data:

Formato video digital / Digital video format:

| | MAXIMUM TRANSMISSION DISTANCE (meters) AT SERIAL DIGITAL DATA RATES (SDI) |
|--|---|
| 71,5 Mhz/143 Mbps (SMPTE 259M, Composite NTSC) | 438,589 |
| 88,5 Mhz /177 Mbps (ITU-R BT. 601, Composite PAL) | 400,10 |
| 135 Mhz/270 Mbps (SMPTE 259M, Component video) | 330,50 |
| 180 Mhz/360 Mbps (SMPTE 259M, widescreen) | 288,57 |
| 270 Mhz/540 Mbps (SMPTE 344M, widescreen) | 235,38 |
| 750 Mhz/1.5 Gbps (SMPTE 292M, HDTV) THEORETICAL | 99,17 |
| 750 Mhz/1.5 Gbps (SMPTE 292M, HDTV) SDI BNC's | 130 |
| 750 Mhz/1.5 Gbps (SMPTE 292M, HDTV) HDTV BNC's | 151 |
| 1,50 Ghz/3.0 Gbps (SMPTE 424M, Prog. Scan HDTV) THEORETICAL | 64 |
| 1,50 Ghz/3.0 Gbps (SMPTE 424M, Prog. Scan HDTV) HDTV BNC's | 120 |

*WE SUGGEST TO USE ONLY 85% OF THE RECOMMENDED DISTANCE

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Formato video analógico / Analogue video format:

| | TRANSMISSION DISTANCE IN METERS OF ANALOGUE VIDEO SIGNAL WITH MINIMUM LOSSES (MAX -3 dB) |
|-----------------------------------|--|
| M-II (COMPONENT 5,0 Mhz BW) | 157,06 |
| EBU-C (COMPOSITE 5,5 Mhz BW) | 150,01 |
| BETACAM SP (COMPONENT 4,5 Mhz BW) | 165,74 |
| U-MATIC SP (COMPOSITE 4 Mhz BW) | 174,52 |
| S-VHS (COMPOSITE 5,0 Mhz BW) | 157,06 |
| ANALOG COMPONENT/RGB (5,0 Mhz BW) | 157,06 |

*DISTANCE BASED UPON THE LIMIT FREQUENCY OF 5,5 Mhz, 5 Mhz, 4,5 Mhz AND 4 Mhz.

Audio Formato digital / Digital Audio format (SMPTE 276M- unbalanced audio):

| | MAXIMUM TRANSMISSION DISTANCE (meters) AT SERIAL DIGITAL AUDIO DATA RATES (AES3-1992) |
|---|---|
| DSR (Sampling Rate 32Khz/BW 4,096 Mhz) | 1081 |
| CD/DVD (Sampling Rate 44,1 KHz/BW 5,6448 Mhz) | 926 |
| DAT (Sampling Rate 48 KHz/BW 6,144 Mhz) | 874 |
| DVD (Sampling Rate 96 KHz/BW 12,228 Mhz) | 612 |
| DVD (Sampling Rate 192 KHz/BW 24,576 Mhz) | 446 |

Pruebas de HDTV a 151 metros de VK 6/ 151 meters of VK 6 under HDTV transmission: 1080i/720p

| RATE NAME | BIT RATE | H FREQ / V FREQ |
|-----------------------|----------------------------|--------------------|
| 720 p 1280 x 720 | 1.485/1.001 (1.4835) Gbps | 44.96KHz / 59.94Hz |
| 720 p 1280 x 720 | 1.4850 Gbps | 45.00KHz / 60.00Hz |
| 1080i 1920 x 1080 | 1.4850/1.001 (1.4835) Gbps | 33.72KHz / 29.97Hz |
| 1080i 1920 x 1080 | 1.4850 Gbps | 33.75KHz / 30.00Hz |
| 1080p 1920 x 1080 | 1.4850 Gbps | 33.75KHz / 30.00Hz |
| 1080p 1920 x 1080 | 1.4850/1.001 (1.4835) Gbps | 33.72KHz / 29.97Hz |
| 1080p 1920 x 1080 | 1.4850 Gbps | 27.00KHz / 24.00Hz |
| 1080p(sf) 1920 x 1080 | 1.4850 Gbps | 27.00KHz / 24.00Hz |
| 1080p(sf) 1920 x 1080 | 1.4850/1.001 (1.4835) Gbps | 26.97KHz / 23.98Hz |

Pruebas de 3G-SDI a 120 metros de VK 6/ 120 meters of VK 6 under 3G-SDI transmission: 1080p

| RATE NAME | BIT RATE | V FREQ / FORMAT |
|---------------------|------------|-----------------------------|
| 1080p (1920 X 1080) | 2.970 Gbps | 50 Hz / YCbCr 4:2:2 10 bits |
| 1080p (1920 X 1080) | 2.970 Gbps | 60 Hz / YCbCr 4:2:2 10 bits |

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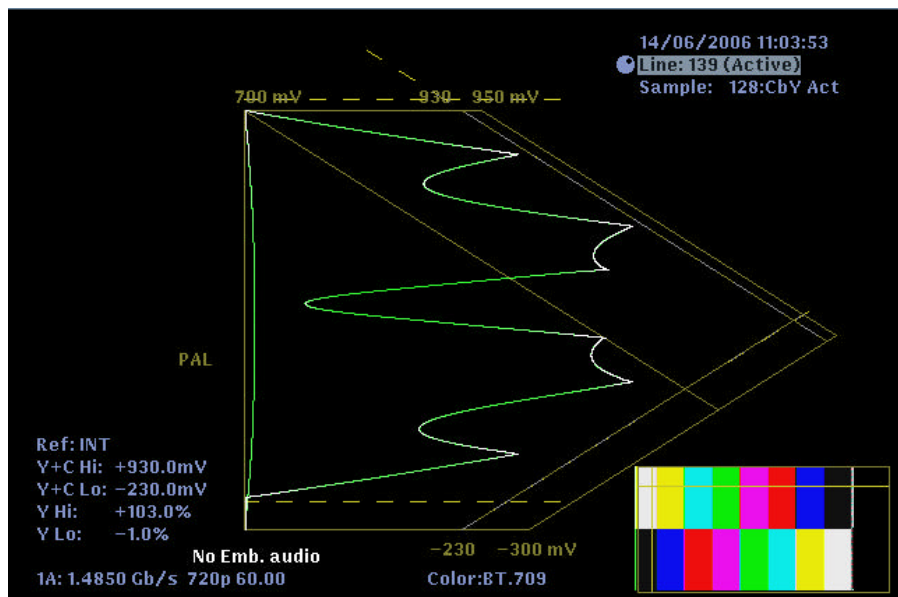
1080i/720p

Se utiliza un generador de señal de video de alta definición EXTRON VTG400D con una tensión de salida de pico a pico de 800 milivoltios ,una velocidad de datos de 1485Mbps o 1485/1001 Mbps, un jitter timing no superior a 1 UI (673 picosegundos) y un jitter alignment no superior a 0,2 UI (134,6 picosegundos) / We use an EXTRON VTG400D high definition video signal generator with an output peak-to-peak voltage of 800 millivolts, a data speed of 1485Mbps or 1485/1001 Mbps, a jitter timing under 1 UI (673 picoseconds) and a jitter alignment under 0,2 UI (134,6 picoseconds).

El receptor es un WFM700M de Tektronix / The receiver is WFM700M Tektronix

| Video Status | | Video Session – Running | |
|----------------------|---------------|-------------------------|-------|
| Input: | 1A (WFM7M) | SMPTE 292 CRC: | |
| Changed since reset: | No | Y Errored Seconds: | 0 |
| Signal: | 1.4850 Gb/s | Y Errored Fields: | 0 |
| Format Exp: | Any Supported | Y % Errored Fields: | 0.00% |
| Format Det: | 720p 60.00 | Y Status: | OK |
| Colorimetry: | BT.709 (AUTO) | C Errored Seconds: | 0 |
| Embedded Audio: | No Emb. audio | C Errored Fields: | 0 |
| Ancillary Data: | None | C % Errored Fields: | 0.00% |
| Active Video Width: | 10 bits | C Status: | OK |
| Timecode: | None | RGB Errored Seconds: | 0 |
| Selected Ref: | INT | RGB Errored Fields: | 0 |
| Ref Format: | N/A | RGB % Errored Fields: | 0.00% |
| CC: | Missing | RGB Gamut Status: | OK |
| Y Stuck Bits: | ----- | Y+C Errored Seconds: | 0 |
| C Stuck Bits: | ----- | Y+C Errored Fields: | 0 |
| | | Y+C % Errored Fields: | 0.00% |
| Y Errored Lines: | 0 | Y+C Gamut Status: | OK |
| C Errored Lines: | 0 | Luma Errored Seconds: | 0 |
| | | Luma Errored Fields: | 0 |
| Time since reset: | 0:00:33:35 | Luma % Errored Fields: | 0.00% |
| | | Luma Gamut Status: | OK |

Errores en tx. de señal de video / Video session errors.



Gamut Arrowhead.

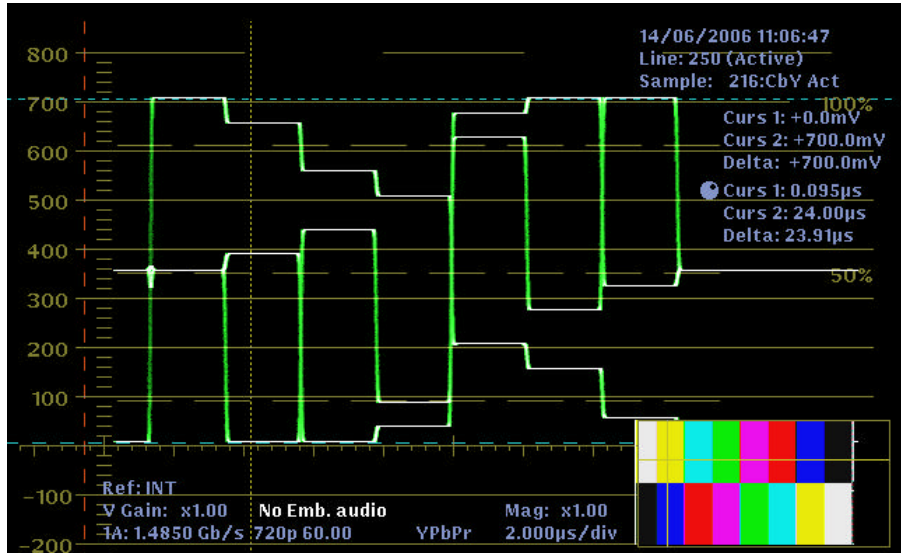


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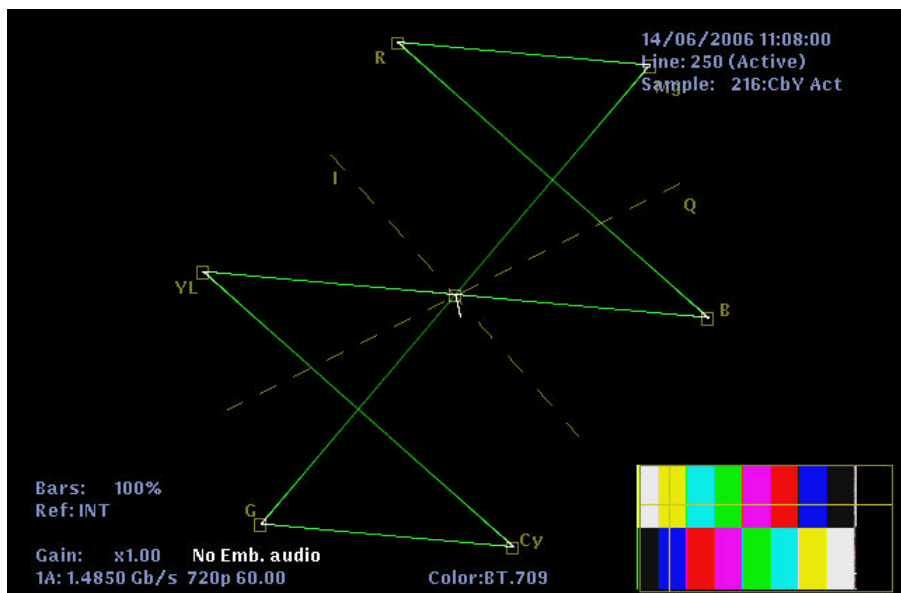
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For ma de onda / Waveform.



Vector.



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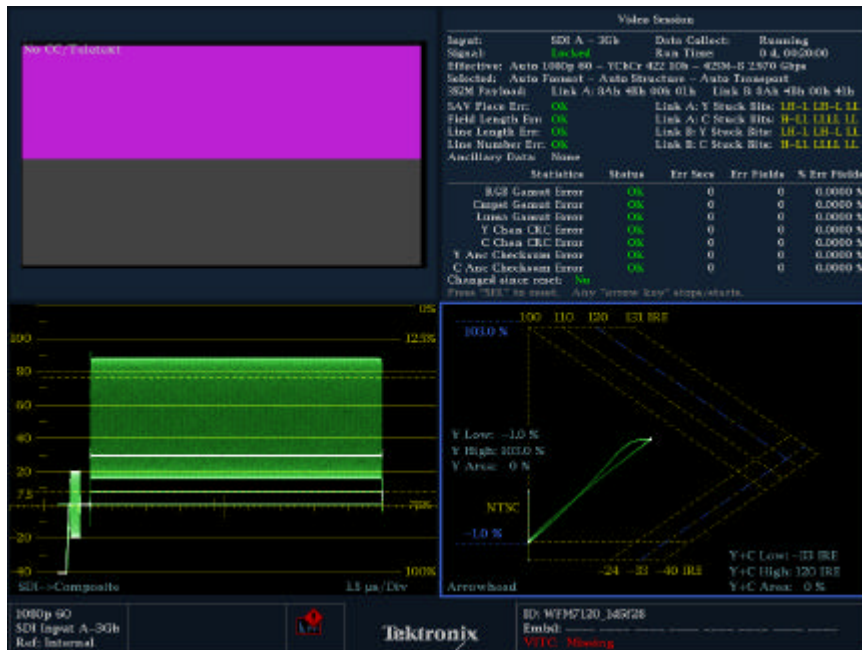
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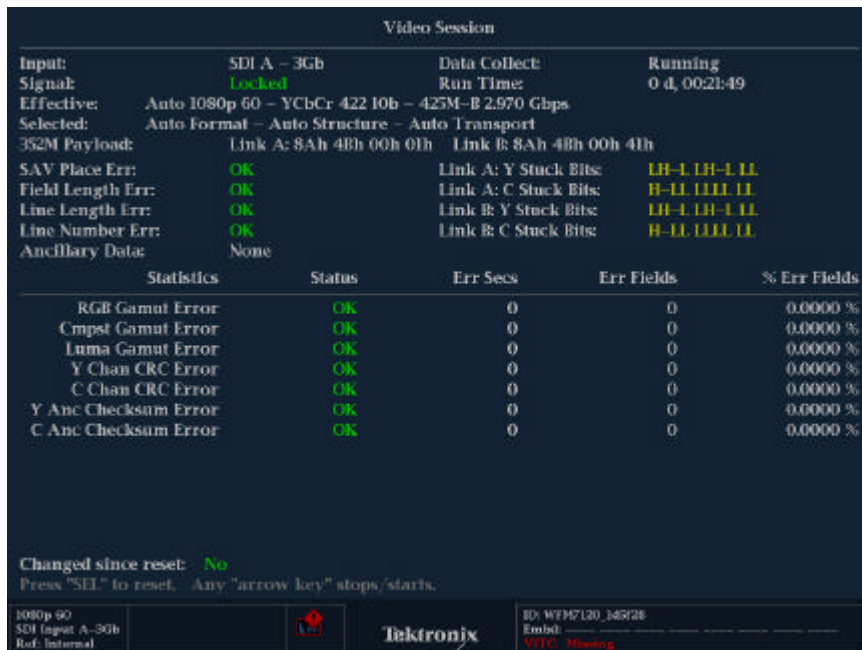
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1080p

Se utiliza un generador de señal de video progresivo de alta definición (3G-SDI) y monitor de forma de onda de la marca Tektronix, modelo WFM 7120, con una velocidad de transmisión de datos de 2.970 Gbps (SMPTE 424/425M) y un refresco de pantalla de 50/59.94/60 Hz.
We use a progressive high definition video signal generator (3G-SDI) and a Tektronix WFM 7120 waveform monitor, with a data transmission speed of 2.970 Gbps (SMPTE 424/425M) and a screen refresh rate of 50/59.94/60 Hz.



Picture / Report/WFM/Gamut Arrowhead



Errores en tx. de señal de video / Video session errors.

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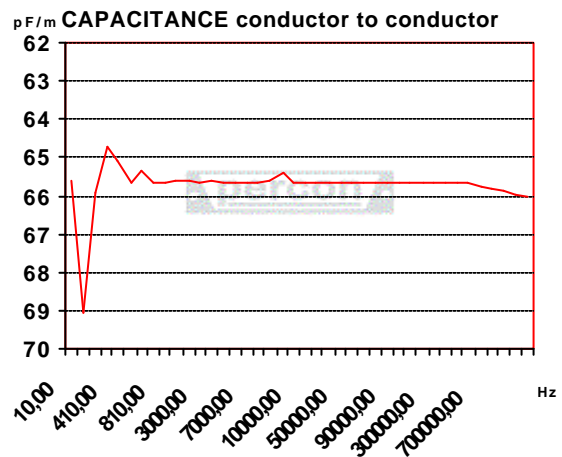
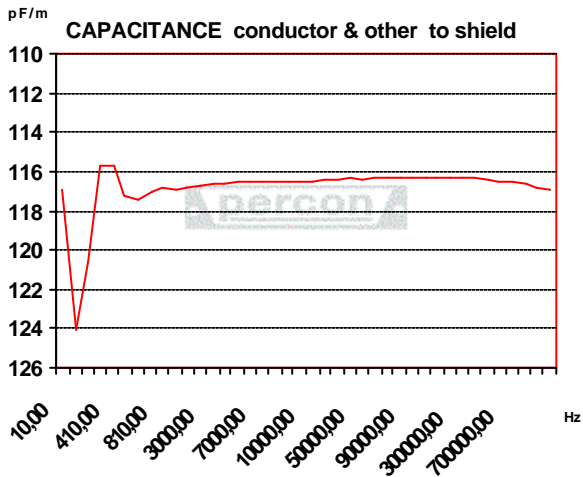
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AUDIO CABLE AK 14015 AL NPI DATA:

| | | |
|--|------------|---------|
| Impedancia nominal/ Nominal impedance | W | 91,8859 |
| Cap. conductor a conductor y masa @ 1Khz/ Cap. between Conductor and other to shield @ 1Khz | pF/m | 116,801 |
| Resistencia malla en DC/shield DC resistance | W/Km | 91,6581 |
| Cap. entre conductor y conductor a @ 1Khz/ Cap. between conductor to conductor @ 1Khz | pF/m | 63,5904 |
| Resistencia del vivo en DC/ Conductor DC Resistance | W/Km | 61,8924 |
| Inductancia del vivo a 1Mhz/ Conductor inductance @ 1Mhz | µH/m | 1,1227 |
| ATENUACIÓN/ATTENUATION | Frec (Khz) | dB/100m |
| | 348,259 | -2,75 |
| | 2712,935 | -9,83 |
| | 5125,871 | -12,94 |
| | 6814,925 | -14,74 |
| | 7538,806 | -15,53 |
| | 8745,274 | -16,70 |
| | 9469,154 | -17,64 |
| | 9951,741 | -17,85 |



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DATA CABLE UTP CAT. 5e Solid Wire DATA:

| | | |
|--|------|----------|
| Impedancia nominal/ Nominal impedance | W | 100 |
| Cap. entre conductor y conductor a @ 1Khz/ Cap. between conductor to conductor @ 1Khz | pF/m | 46,2563 |
| Resistencia del vivo en DC/ Conductor DC Resistance | W/Km | 84,9033 |
| Inductancia del vivo a 1Mhz/ Conductor inductance @ 1Mhz | µH/m | 0,671139 |

| FREQ. (Mhz) | Attenuation (dB/100m) | NEXT (dB) | PS-NEXT (dB) | ACR (dB/100m) | PS-ACR (dB/100m) | ELFEXT (dB/100m) | PS- ELFEXT (Db/100m) | Return Loss (dB) |
|----------------|--------------------------|--------------|-----------------|------------------|---------------------|---------------------|----------------------------|---------------------|
| 1 | 1.9 | 71 | 68 | 69.1 | 66.1 | 68 | 65 | 20 |
| 4 | 3.7 | 62 | 59 | 58.3 | 55.3 | 56 | 53 | 23 |
| 10 | 6.0 | 56 | 53 | 50.0 | 47.0 | 48 | 45 | 25 |
| 16 | 7.6 | 53 | 50 | 45.4 | 42.4 | 44 | 41 | 25 |
| 20 | 8.5 | 51 | 48 | 42.5 | 39.5 | 42 | 39 | 25 |
| 31,25 | 10.7 | 49 | 46 | 38.3 | 35.3 | 38 | 35 | 24 |
| 62,5 | 15.7 | 44 | 41 | 28.3 | 25.3 | 32 | 29 | 22 |
| 100 | 19.8 | 41 | 38 | 21.2 | 18.2 | 28 | 25 | 20 |
| 125 | 22.3 | 40 | 37 | 17.7 | 14.7 | 26 | 23 | 19 |
| 155 | 24.2 | 38 | 35 | 13.8 | 10.8 | 24 | 21 | - |
| 175 | 25.7 | 37 | 34 | 11.3 | 8.3 | 23 | 20 | - |
| 200 | 27.5 | 36 | 33 | 8.5 | 5.5 | 22 | 19 | - |
| 250 | 29.2 | 35 | 32 | 5.8 | 2.8 | 20 | 17 | - |
| 300 | 32.0 | 34 | 31 | 2.0 | -1.0 | 16 | 13 | - |

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